Study programme(s): Informatics (IM)

Level: master

Course title: Component based development (code IB332)

Lecturer: Srđan M. Škrbić

Status: obligatory for Information technologies module, elective for other modules

ECTS: 7,5

Requirements: none

Learning objectives

The main objective of this course is to provide practical overview of component based development and its relationship to the object-oriented approach. Service oriented architecture is studied as a prevailing approach to the component based development. EJB 3 technology, especially its aspects related to this topic, is introduced.

Learning outcomes

Minimal: Students are expected to show clear understanding of theoretical concepts of component based development and be able to apply the appropriate techniques of implementation using EJB 3 technology.

Desirable: Students are expected to show the ability to critically discuss the key concepts in component based development and influence of this topic to modern trends in business computing and software engineering. Additionally, they are expected to show detailed knowledge of aspects of EJB 3 technology that allow development of applications based on components and service oriented architecture.

Syllabus

Theoretical instruction

Theoretical background of component based development, architecture of software based on components, relation to object-oriented approach, service oriented architecture. Basic concepts of EJB 3 technology, EJB 3 messaging, development of web services using the EJB 3 technology, EJB 3 security.

Practical instruction

Analysis of case studies through the use of EJB technology, Eclipse development environment and JBoss application server. Individual work on a comprehensive case study.

Literature

1. Debu Panda, Reza Rahman, Ryan Cuprak, "EJB 3 in Action", 2nd edition Manning, 2012.
2. Javid Jamae, Peter Johnson, "JBoss in Action", Manning, 2009.
3. Alan W. Brown, "Large-Scale, Component-Based Development", Prentice Hall, 2000.
4. Hedley Apperly, Ralph Hofman, Steve Latchem, Barry Maybank, Barry McGibbon, David Piper, Chris Simons, "Service and Component-based Development: Using Select Perspective and UML", Addison-Wesley, 2003.
5. Vlada Matena, Sanjeev Krishnan, Linda DeMichiel, Beth Stearns, "Applying Enterprise JavaBeans: Component-Based Development for the J2EE Platform, Second Edition", Addison Wesley, 2003.
6. Andrew Lee Rubinger, Bill Burke, "Enterprise JavaBeans 3.1", O'Reilly, 2010.

Weekly teaching load				Other:
Lectures: 2	Exercises: 3	Other forms of teaching:	Student research:	

Teaching methodology

Classical methods of teaching with the use of a video-beam are used to present topics in theoretical classes. Classical methods of teaching with the use of a projector are also used to analyze case studies and practically master the skills of usage of the tools suggested in practical classes. Students expand their knowledge by investigating the topics presented and test it through two colloquia that are related to the work on an individual case study.

Grading (maximum number of points 100)

Pre-exam obligations	**points**	**Final exam**	**points**
Colloquiua	**50**	Oral exam	50